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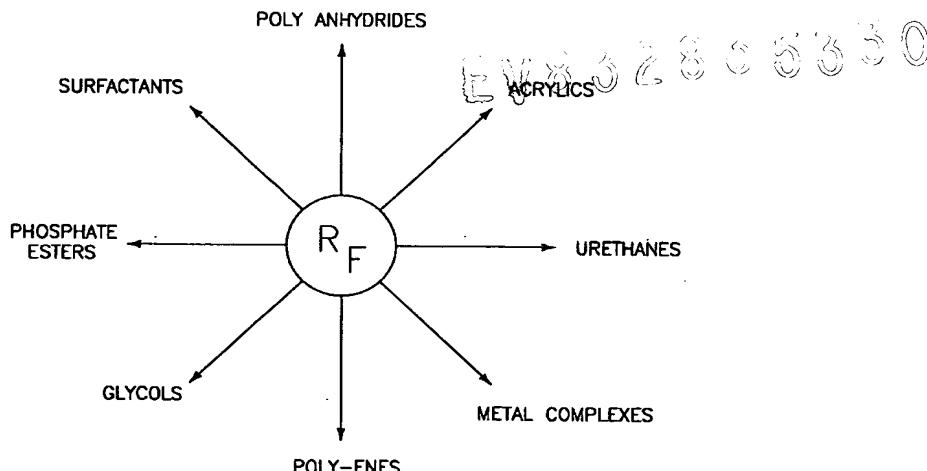
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(54) Title: PRODUCTION PROCESSES AND SYSTEMS, COMPOSITIONS, SURFACTANTS, MONOMER UNITS, METAL COMPLEXES, PHOSPHATE ESTERS, GLYCOLS, AQUEOUS FILM FORMING FOAMS, AND FOAM STABILIZERS



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(57) Abstract: Production processes and systems are provided that include reacting halogenated compounds, dehalogenating compounds, reacting alcohols, reacting olefins and a saturated compounds, reacting reactants having at least two -CF<sub>3</sub> groups with reactants having cyclic groups. RF compositions such as R<sub>F</sub>-intermediates, R<sub>F</sub>-surfactants, R<sub>F</sub>-monomers, R<sub>F</sub>-monomer units, R<sub>F</sub>-metal complexes, R<sub>F</sub>-phosphate esters, R<sub>F</sub>-glycols, R<sub>F</sub> urethanes, and/or R<sub>F</sub>-foam stabilizers. The R<sub>F</sub> portion can include at least two -CF<sub>3</sub> groups, at least three -CF<sub>3</sub> groups, and/or at least two -CF<sub>3</sub> groups and at least two -CH<sub>2</sub>- groups. Detergents, emulsifiers, paints, adhesives, inks, wetting agents, foaming, and defoamers including the R<sub>F</sub>-surfactant composition are provided. Acrylics, resins, and polymers are provided that include a R<sub>F</sub>-monomer unit. Compositions are provided that include a substrate having a R<sub>F</sub>-composition thereover. Aqueous Film Forming Foam ("AFFF") formulations are provided that can include R<sub>F</sub>-surfactants and/or R<sub>F</sub>-foam stabilizers are provided.



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**Declarations under Rule 4.17:**

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